Amendments to the claims:

This listing of claims will replace all prior versions, and listing, of claims in the application:

1.   (Currently amended) A method executed by a processor for producing a combined adaptive directional signal, the method comprising:

_____deriving from <u>one of </u>two omni-directional microphones a first signal having an omni-directional polar pattern<u>;</u> ~~and~~

_____<u>deriving from the two omni-directional microphones </u>a second signal having a bi-directional polar pattern, and

_____constructing the combined adaptive directional signal from a weighted sum of a first signal weight of the first signal and a second signal weight of the second signal,

_____wherein the first <u>signal weight </u>and <u>the </u>second signal weight~~s~~ are calculated <u>in a non-iterative manner by an optimiser, the optimiser taking the first signal and the second signal as inputs, and the optimiser determining from the first and second signals the first and second signal weights by mathematically calculating the first and second signal weights in a manner to comply with predefined constraints that: (i) the weighted sum is </u>to give the combined <u>adaptive directional </u>signal a constant gain in a predetermined direction<u>, by imposing a constraint that the first signal weight and the second signal weight add to a predetermined value</u> and (<u>ii</u>) ~~to minimize~~ power of the combined <u>adaptive directional </u>signal <u>is substantially minimized by ensuring that the derivative with respect to signal weight of the energy of the output signal is about zero</u>.

2-3. (Canceled)

4.   (Currently amended) A method according to claim ~~2~~<u>1 </u>wherein the signal weights are calculated by solving the following equation:

$$a = \frac{\sum y^2 - \sum xy}{\sum x^2 - 2\sum xy + \sum y^2}$$

Where:

a = weight for the first signal

$(1-a)$ = weight for the second signal

x = first signal sample

y = second signal sample.

5.   (Previously presented) A method according to claim 1, wherein said signal weights are calculated for a series of frames, each frame having a predetermined length consisting N first signal samples and N second signal samples.

6.   (Original) A method according to claim 5 wherein N=64.

7.   (Previously presented) A method according to claim 5, further including filtering or smoothing the series of weights to minimise frame-to-frame variation in the calculated weights.

8.   (Previously presented) A method according to claim1, wherein the first and second signals are sampled, the signal weights being calculated for successive sets of said first and second signals samples.

9.   (Previously presented) A method according to claim 4, wherein the first and second signals are sampled, the signal weights being calculated for successive sets of said first and second signals samples, and the signal weights are calculated continuously by calculating x^2, y^2 and xy for each sample and adding them to an appropriate running sum.

10.   (Original) A method according to claim 9 wherein a leaky integrator is used to perform the running sum in order to address issues of numerical overflow.

11.   (Previously presented) A method in accordance with claim 1, whereby said signal weights are calculated so as to construct an omni-directional combined signal when a total power in said first signal is below a certain value.

12.   (Previously presented) A method according to claim 4, whereby said signal weights are calculated so as to construct an omni-directional combined signal when a total power in said first signal is below a certain value and value α defaults to a value of 1.0 in the event that Σx^2 is less than a prescribed minimum value.

13.   (Previously presented) A method according to claim 1, wherein the omni-directional microphones comprise a front microphone and a rear microphone, and said predetermined direction is the forward direction along the microphone axis.

14.   (Original) A method according to claim 13, wherein the second signal is provided by the difference between signals produced by the front and rear microphones, without the use of a delay element.

15.   (Previously presented) A method according to claim 14, further comprising processing the second signal by means of an integrator element or an integrator-like filter before constructing the combined signal, thereby compensating for the attenuation of low frequencies and phase shifts introduced in the subtraction of the two omni-directional signals.

16.   (Previously presented) A method according to claim 14, further comprising amplifying the signals produced by the front and/or the rear microphone before constructing the bi-directional signal, to ensure an equivalent gain between the microphones.

17.   (Previously presented) A method according to claim 1, wherein said first and second signals are frequency domain samples.

18.   (Previously presented) A method according to claim 17, further comprising calculating and applying the weights to several independent subsets of frequency domain samples, to give different directional responses at different frequencies and/or to allow selective suppression of different frequencies.

19.   (Previously presented) A method according to claim 1, comprising applying a frequency weighting function to said first and second signal before calculating said signal weights.

20.   (Currently amended) An apparatus for producing a combined adaptive directional signal, the apparatus comprising: ~~apparatus including~~

an analog-to-digital converter for producing from <u>one of</u> two omni-directional microphones a first signal having an omni-directional polar pattern<u>;</u> ~~and~~

<u>a differencing element for deriving from the two omni-directional microphones</u> a second signal having a bi-directional polar pattern; ~~and apparatus including~~

a summation device for constructing the adaptive directional signal from a weighted sum of a first signal weight of the first signal and a second signal weight of the second signal~~,~~<u>; and</u>

<u>an optimiser for calculating the first signal weight and the second signal weight in a non-iterative manner, the optimiser taking the first signal and the second signal as inputs, and the optimiser determining from the first and second signals the first and second signal weights by mathematically calculating</u>~~wherein~~ the first and second signal weights ~~are calculated~~ <u>in a manner to comply with predefined constraints that: (i) the weighted sum is</u> to give the combined <u>adaptive directional</u> signal a constant gain in a predetermined direction<u>, by imposing a constraint that the first signal weight and the second signal weight add to a predetermined value</u> and <u>(ii)</u> ~~to minimize~~ power of the combined <u>adaptive directional</u> signal <u>is substantially minimized by ensuring that the derivative with respect to signal weight of the energy of the output signal is about zero</u>.

21.   (Canceled)

22.   (Previously presented) An apparatus according to claim 20, including means for calculating the weights by solving the following equation:

$$a = \frac{\sum y^2 - \sum xy}{\sum x^2 - 2\sum xy + \sum y^2}$$

Where:

a = weight for the first signal

$(1-a)$ = weight for the second signal

x = first signal sample

y = second signal sample.

23.   (Previously presented) An apparatus according to claim 20, including means for calculating said signal weights for a series of frames, each frame having a predetermined length consisting of N first signal samples and N second signal samples.

24.   (Previously presented) An apparatus according to claim 20, including a filter for filtering or smoothing the series of weights to minimize frame-to-frame variation in the calculated weights.

25.   (Previously presented) An apparatus according to claim 20, including means for calculating said weights continuously for samples of said first and second signals.

26.   (Previously presented) An apparatus according to claim 20, including a leaky integrator to perform a running sum on said first and second signal samples in order to address issues of numerical overflow system memory.

27.   (Previously presented) An apparatus according to claim 20, including means for calculating said signal weights so as to construct an omni-directional combined signal when a total power in said first signal is below a certain value.

28.   (Previously presented) An apparatus according to claim 20, wherein the two spaced omni-directional microphones comprise a front and a rear microphone, signals from which are used for deriving said first and second signals, and said predetermined direction is the forward direction along the microphone axis.

29.   (Original) An apparatus according to claim 28, including means for providing said second signal from the difference between signals produced by the front and rear microphones, without the use of a delay element.

30.   (Previously presented) An apparatus according to claim 28, including an integrator element or an integrator-like filter for processing the second signal before constructing the combined signal, thereby compensating for attenuation of low frequencies and phase shifts introduced in the provision of the second signal.

31.   (Previously presented) An apparatus according to claim 28, including a means for amplifying the signals produced by the front and/or the rear microphone before the step of constructing the bi-directional signal, to ensure an equivalent gain between the microphones.

32.   (Currently amended) A computer program stored in a computer-readable storage medium, said computer program, when executed by a computer, performing the steps of:

_____deriving from one of two omni-directional microphones a first signal having an omni-directional polar pattern; and

_____deriving from the two omni-directional microphones a second signal having a bi-directional polar pattern; and

_____constructing the combined adaptive directional signal from a weighted sum of a first signal weight of the first signal and a second signal weight of the second signal;

_____wherein the first signal weight and the second signal weights are calculated in a non-iterative manner by an optimiser, the optimiser taking the first signal and the second signal as inputs, and the optimiser determining from the first and second signals the first and second signal weights by mathematically calculating the first and second signal weights in a manner to comply with predetermined constraints that: (i) the weighted sum is to give the combined adaptive directional signal a constant gain in a predetermined direction, by imposing a constraint that the first signal weight and the second signal weight add to a predetermined value and (ii) to minimize power of the combined adaptive directional signal is substantially minimized by ensuring that the derivative with respect to signal weight of the energy of the output signal is about zero.